



Academy



California Academy of Sciences – Golden Gate Park

October/November 1997

**Mayor Brown
Visits Cal Academy**

**Morrison Planetarium
Turns 45**

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San Francisco, CA

To explore and explain the natural world



Dr. Evelyn Handler

Executive Director's Message

Welcome to the first revised edition of *Academy*. It's a new look for us and one we hope you will enjoy.

The first change you will notice is that *Academy* is full-color. Through color photographs and graphics you will get a better sense of the diversity and variety of what we have to offer. Secondly it will be a bi-monthly publication.

Academy will do more than just list the programs that are available. Our goal is to give you a more informative, in-depth and user-friendly format while exposing you to the countless activities that fill our halls daily. We also want to share with you, the members, the issues that face the Academy of Sciences during these exciting times.

Finally, one aspect of our institution of which we are enormously proud is our Research Division. In *Academy*, you can look forward to expanded coverage of our scientists' exciting latest discoveries and insights into the natural world around us.

In closing, we have much to be proud of at the California Academy of Sciences. The new *Academy* newsletter is but one of the ways we can share the wealth of our years of service to the community with you, our members.

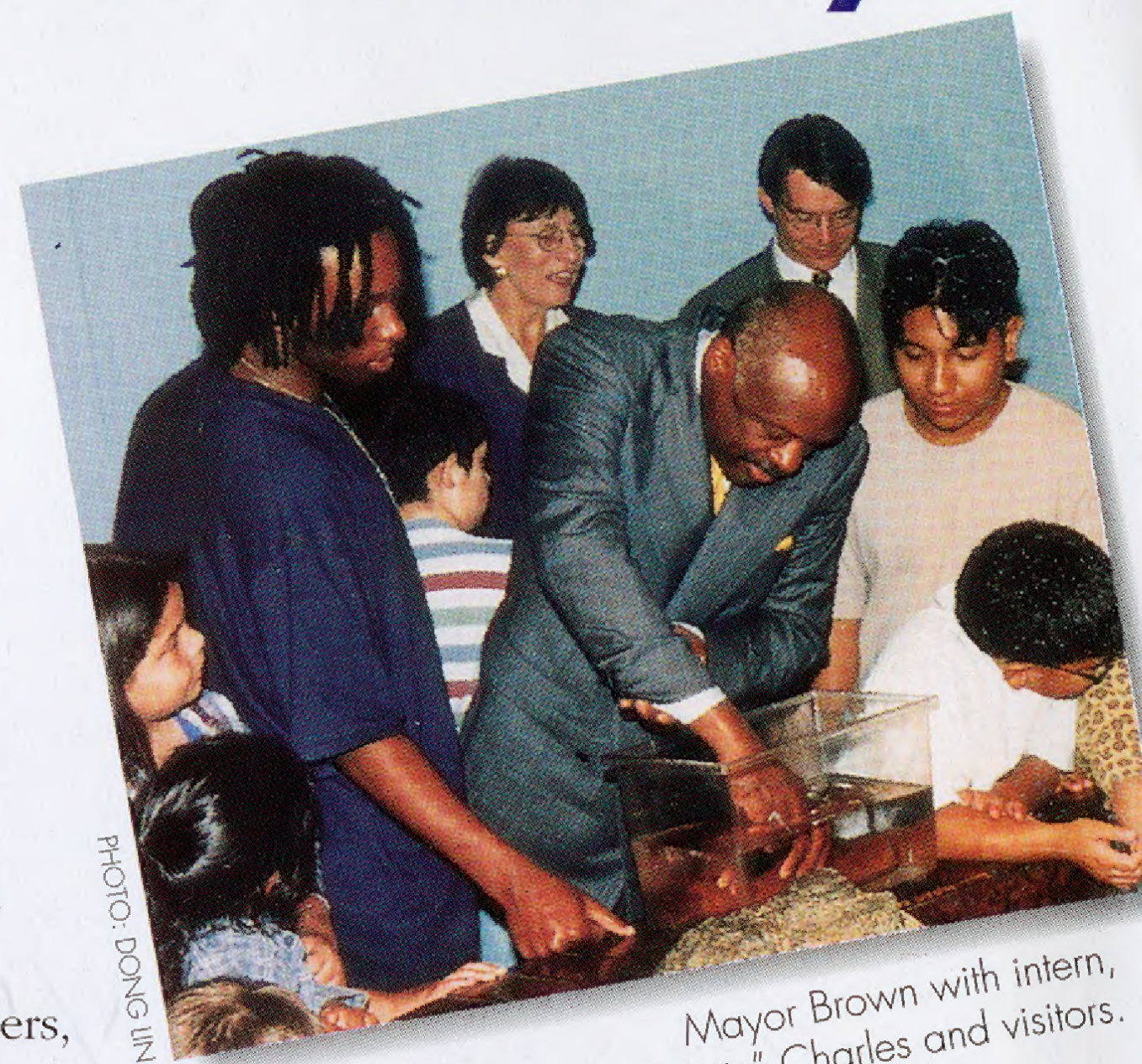
Mayor Willie Brown's Visit to Cal Academy

On August's free first Wednesday, Mayor Willie L. Brown, Jr. toured the Academy with members of the Internship Program. It was a near-record day for visitors on free first Wednesdays—with 21,000 visitors coming through Academy doors. Mayor Brown's interest in young people and in particular, youth programs that inspire learning and future careers, is what drew him to learn more about our Internship Program.

In the last year, coordinator Kellyx Nelson has developed the Intern Program into a model of youth empowerment through science education and paid work experience. Her success with the enthusiastic young people who make up the Program's 20 participants has not gone unnoticed. Kellyx is closely involved with Mayor Brown's YouthWorks which helps pair San Francisco youth with public sector jobs and job training. Kellyx's contributions to this important group are a wonderful reflection of who and what we are at the Academy.

During Mayor Brown's tour, interns were poised to explain to him the Foucault Pendulum, show him reptile skins and even have him roll up his sleeves to touch the stars in our touch tidepool. The Mayor was delighted with the pride and fervor with which these young people approach science literacy and public interaction.

The record number of visitors to the Academy were given a double dose of exciting things to observe when they came on August 6: dinosaurs, sharks, smart young interns and the Mayor of San Francisco. The Academy really does have everything all in one place.



Mayor Brown with intern, Richard "Natty" Charles and visitors.



Dr. Evelyn Handler and Mayor Willie Brown tour the Academy.

The Academy's 13th Annual Run to the Far Side

Sunday, November 30

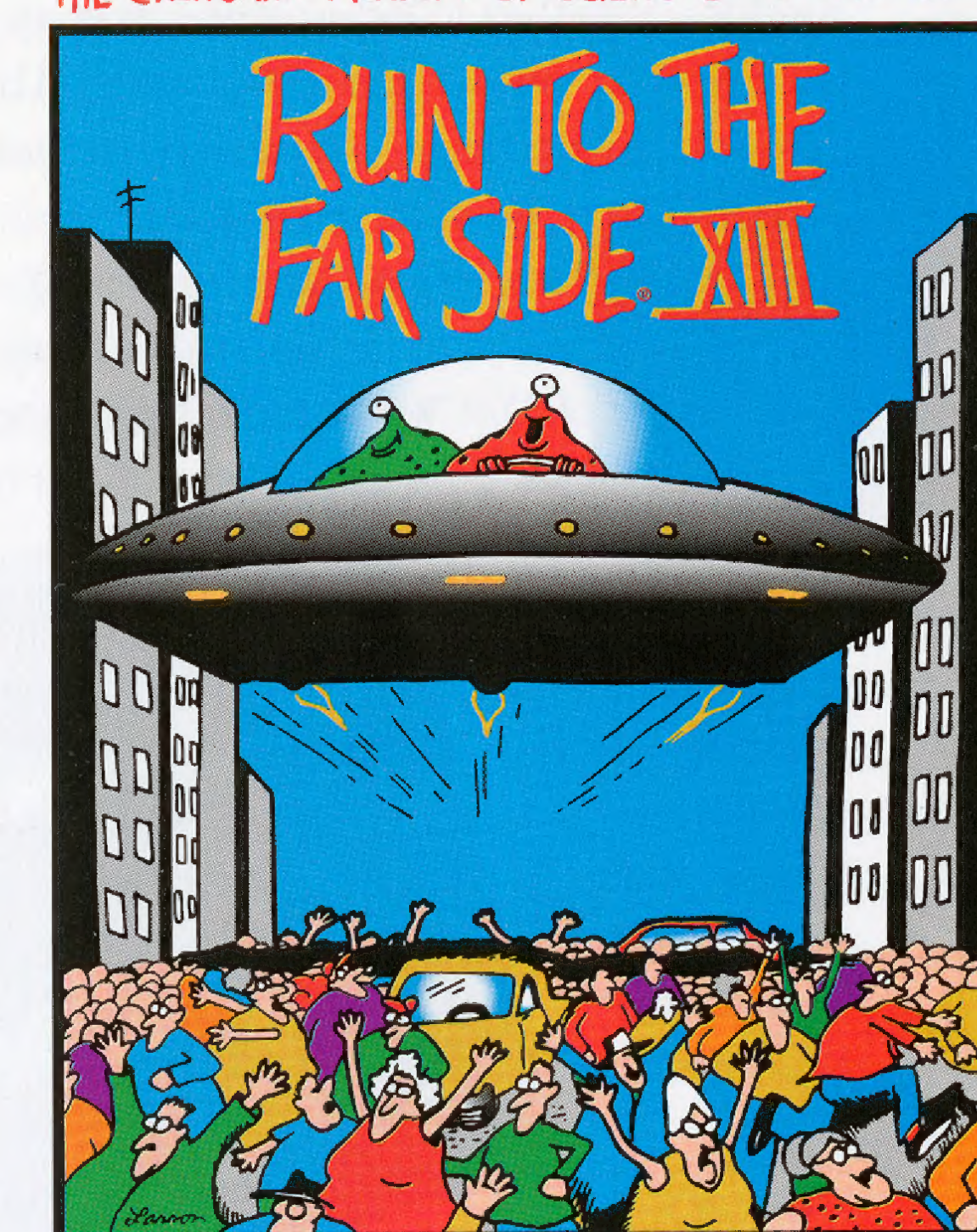
The 5K and 10K Run to the Far Side is a Thanksgiving weekend tradition that pays tribute to the zany cartoon creations of Gary Larson. It is the only race where herds of costumed cows, chickens, squid, cavemen and assorted Far Side fanatics compete side-by-side with serious athletes in a beautiful jaunt through Golden Gate Park.

Costumes honoring Larson cartoon characters are a race tradition in the 5K, with a costume contest following the race. Those more interested in slimming their waistline from the recent Thanksgiving dinner feast are invited to join in the 10K run.

Runners start at 8:30 am on the Music Concourse in front of the Academy of Sciences. The race's many loyal sponsors provide additional incentives to participants with post-race refreshments, entertainment and festivities on the Music Concourse after the run.

Prizes for the 1st place winners of the 5K and 10K race

THE CALIFORNIA ACADEMY OF SCIENCES PRESENTS...



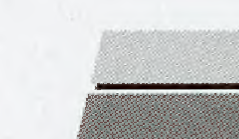
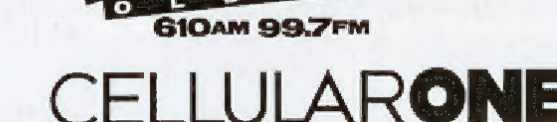
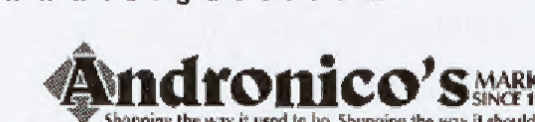
"Yeeeeeeeeeecha!"

and costume contest include roundtrip Southwest Airlines tickets and Far Side Memorabilia autographed by Gary Larson. A race-day drawing gives participants a chance to win a Carnival Cruise, a Napa Wine Country Tour, and many other great prizes.

Following the race, registered runners are invited into the Academy of Sciences to enjoy Larson's cartoons in the "Far Side of Science" hall, Steinhart Aquarium and natural history museum for free. Public transportation, carpooling and bicycling are strongly encouraged.

Registration fees are \$15 for members of the Academy of Sciences and \$20 for nonmembers, or \$25 for all on race morning. Race fees support environmental education and research programs at the Academy of Sciences. To register,

please send in this registration form by November 21, or call the RhodyCo race hotline at (415) 564-0532. If you would like to volunteer the day of the race, please contact Meg Brandin by November 1 at (415) 750-7391 or e-mail at mbrandin@calacademy.org.



Host/Beneficiary: California Academy of Sciences • Race Management: RhodyCo Productions • RACE HOTLINE: (415) 564-0532

RUN TO THE FAR SIDE XIII

PRE-REGISTER: by November 21st for \$20. (Members of the California Academy of Sciences are \$15.) Mail checks (payable to C.A.S.), signed, completed entry form and a self-addressed, stamped envelope to **RUN TO THE FAR SIDE** c/o RhodyCo Productions - 1417 Irving Street, San Francisco, CA 94122. **OR JOIN US RACE DAY FOR \$25.** Sorry, no refunds. One entry per person.

SEX	<input type="checkbox"/> M <input type="checkbox"/> F	DATE OF BIRTH	MONTH <input type="text"/> DAY <input type="text"/> YEAR <input type="text"/>	Age (on race day)	<input type="text"/>	WHEELCHAIR	For Official Use Only	
LAST NAME	<input type="text"/>				FIRST	<input type="text"/>		
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CITY	<input type="text"/>				STATE	<input type="text"/>	ZIP	<input type="text"/>
<input type="checkbox"/> 5K <input type="checkbox"/> 10K		CALIFORNIA ACADEMY OF SCIENCES MEMBER # <input type="text"/>		<input type="checkbox"/> NON-MEMBER		PHONE# <input type="text"/>		

WAIVER: In consideration of your accepting this entry for RUN TO THE FAR SIDE XIII held on November 30, 1997, I, intending to be legally bound, do hereby for myself, my heirs, executors, and administrators waive and release any and all rights and claims for damages I may accrue against the California Academy of Sciences, the Recreation and Parks Department, City and County of San Francisco, RhodyCo Productions, Total Race Systems, USA Track & Field, their employees, representatives, all sponsors and volunteers for any and all injuries that may be suffered by me at or enroute to or from the event. I attest that I am physically fit and sufficiently trained for this competition, my physical condition verified by a licensed M.D. during the last six months. I will assume my own medical and emergency expenses in the event of an accident or other incapacity or injury resulting from or occurring from my participation. As part of the waiver I acknowledge that I have read and understand all of the above and, in consideration of this being an amateur event, I grant full permission to any and all organizations which obtain photographs, motion pictures, videotapes, recording or any other record of this event to use them for any purpose whatsoever.

SIGNATURE _____

DATE: _____

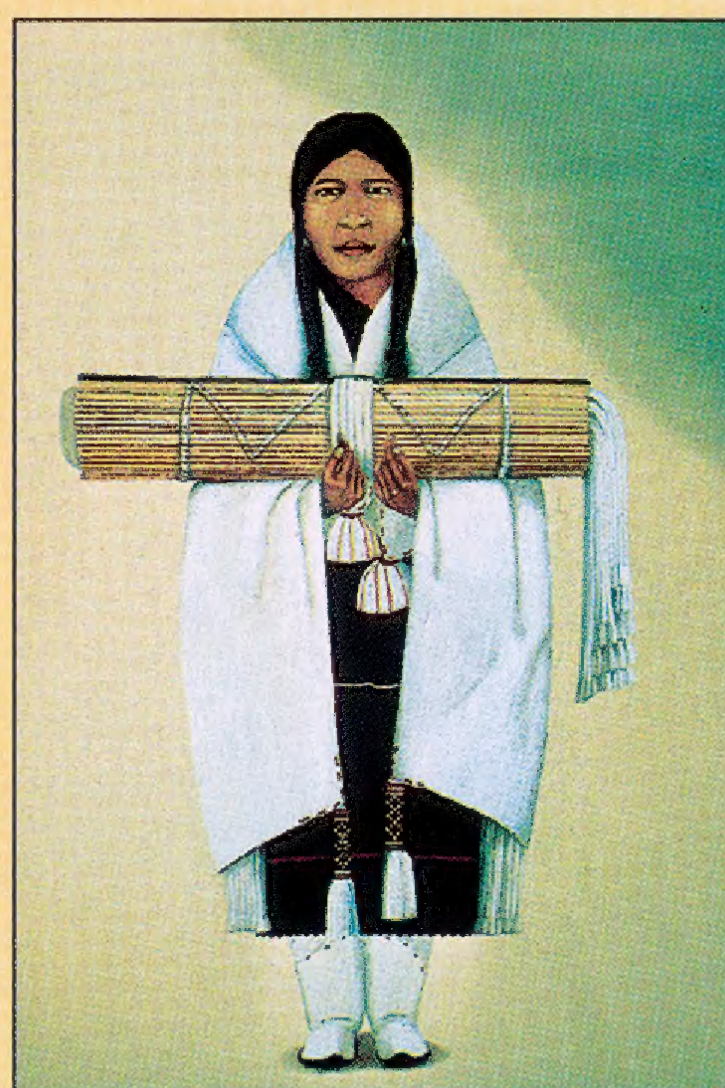
ALL ENTRANTS MUST READ & SIGN WAIVER. (Parent or Guardian must sign if under 18)

The Elkus Web Page

The California Academy of Sciences houses a collection of over 2,000 documents related to Native American affairs over the period of 1922-1963. These papers came from the estate of Charles de Young Elkus, a San Francisco attorney whose sense of fairness manifested itself in his opinions and in the positive influence he exerted through his interest in the struggles of Native Americans of the Southwest.

Charles Elkus and his wife Ruth became involved with the Indians primarily through the Indian reform movement of the 1920's. Through legal advice, leadership in public support groups, and numerous personal contacts, they helped the Pueblo Indians regain control over their lands and water, which had been taken by white squatters. The movement of which they were a part eventually culminated in the Roosevelt administration's "Indian New Deal" of the 1930's.

The Elkus Papers were brought to the Academy in 1980 through the efforts of Charles Elkus' son Ben. It is his hope that The Elkus Web Page will make the papers more accessible to researchers and those interested in our native history. Please visit The Elkus Web Page at www.calacademy.org/research/library/elkus.



Anthropology Department

Anthropology is a broadly based discipline that explores all aspects of the human condition, from human evolution to languages, and from stone artifacts to folk art. The six dedicated and enthusiastic individuals who make up the Anthropology Department at the Academy enjoy working together to bring anthropology to our visitors, as well as to people in their homes, offices and classrooms. The Department is one of the Academy's newest, having been formally constituted under the endowed Irvine Chair of Anthropology only 20 years ago.

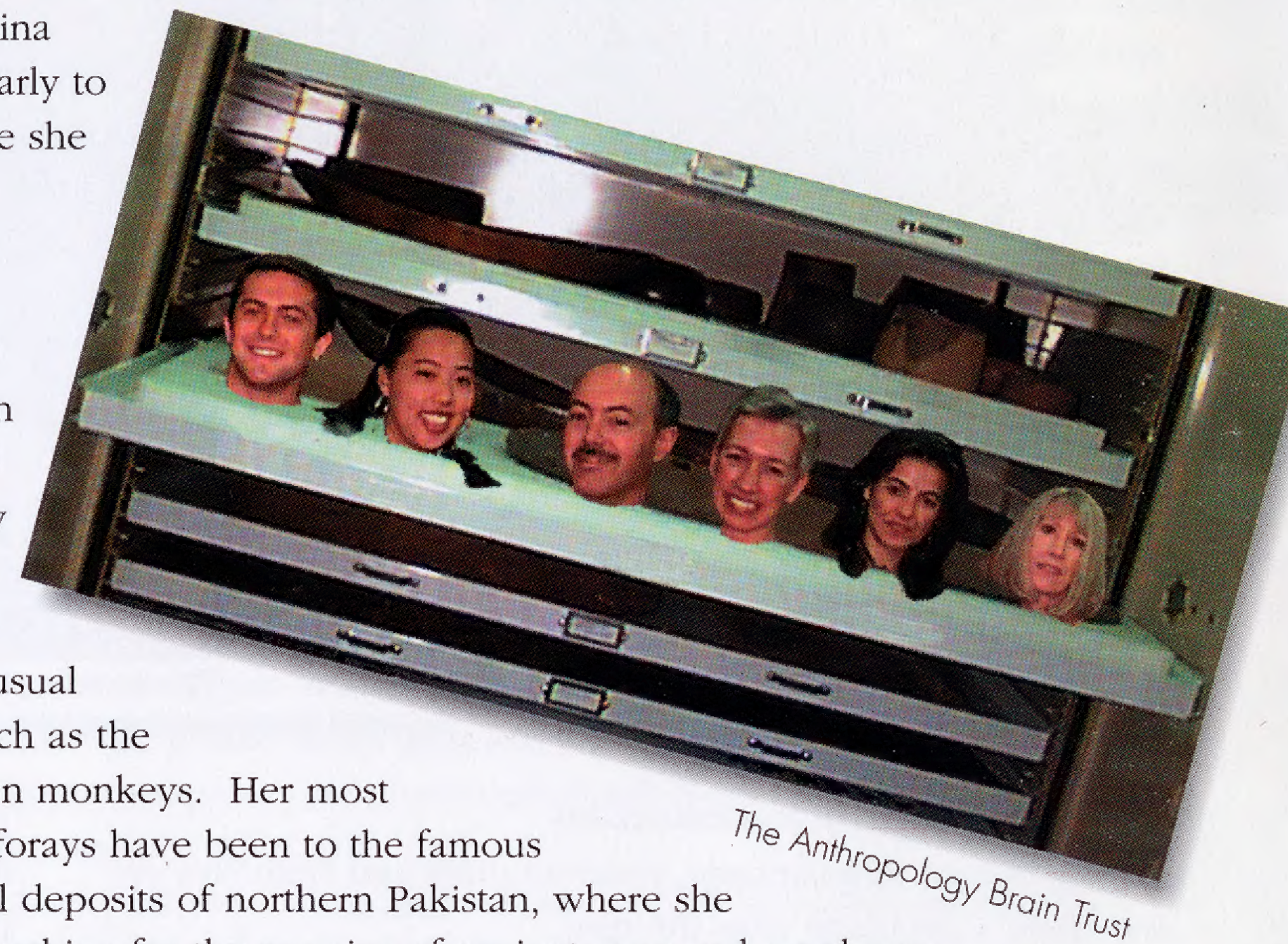
The current Irvine Chair and Head of the Department, Dr. Nina Jablonski, is a physical anthropologist whose research focuses on the evolution and systematics of Old World higher primates (including monkeys, apes and humans). Nina travels regularly to China, where she works with Chinese colleagues on problems of the evolution and adaptation of many of the country's rare and unusual primates, such as the fabled golden monkeys. Her most recent field forays have been to the famous Siwalik fossil deposits of northern Pakistan, where she has been searching for the remains of ancient apes and monkeys.

In its back rooms, the department's ethnographic collections house some 24,000 artifacts. Nearly everyone can come "behind the scenes" and see them on the Worldwide Web at www.calacademy.org/research/anthropology/. These and the several virtual exhibits on the Department's site were produced under the supervision of its Senior Collection Manager, Russ Hartman, its Curatorial Assistant, Andy Lax, and its Secretary, Nancy Gee.

The Traditional Arts Program is another of the Department's treasures. This program, now in its 15th year, operates under the financial sponsorship of the Paul L. and Phyllis Wattis Foundation, and celebrates the ethnic diversity of the Bay Area. The program's supervisor and long-term inspiration, June Anderson, has recently been joined by Almudena Ortiz, who coordinates the weekly program series.

The Department also organizes annual symposia sponsored by the Wattis Foundation and the Rietz Food Technology Foundation. The biennial Wattis Symposia present topics of broad interest in anthropology to the general public. The biennial Rietz Symposia, which alternate with Wattis Symposia, are dedicated to some aspect of the anthropology of food. Nina and her staff are now enjoying making preparations for the 1998 Rietz Symposium on "Foods and Healing".

One of the long-term goals of the Anthropology Department is to help bring more anthropology to the public floor. (They know that all people, not just the Anthropology Department, love learning about people!)



New Benefits for Annual Corporate Support

Many corporations annually support Academy programs, creating invaluable alliances that enable the institution to explore and explain the natural world. The new Corporate Partners Program offers an exciting range of benefits to corporations in recognition of their annual contributions supporting the Academy's research and educational programs. Each year, the family of corporate supporters donates more than five hundred thousand dollars in cash and in-kind gifts. Through the Corporate Partners Program, the Academy will offer its corporate supporters recognition opportunities that correspond to the amount of unrestricted funds, ranging from \$1,000 to \$250,000, granted during each year.

Distinctive benefits will be offered in three categories, including those for the company as a whole, those for the company's employees and their families, and those for its executives and clients. At the Benefactor (\$250,000) level, the Academy offers recognition in an exhibit or program; the waiver of the exhibit rental fee for an evening event; recognition in this newsletter; recognition in *California Wild*, our quarterly natural history magazine; discounts on employee family memberships; corporate memberships; invitations to exhibit opening events; and behind-the-scenes tours. For information about joining the Corporate Partners Program, please call the Development Department at (415) 750-7216.

Life Income Gifts Benefit You and the Academy

Would you like to indulge yourself . . . with a holiday gift that will pay you income for the rest of your life?

As this newsletter goes to print, the stock market is at historic highs and many Academy members find themselves holding low-yielding, highly-appreciated securities. Even with the recent tax change reducing capital gains rates, California taxpayers still pay combined state and federal capital gains taxes of almost 25% when they sell an appreciated asset.

There is an alternative. By transferring securities into an Academy Life Income Trust you can:

- Generate a new source of annual lifetime income for yourself (and another person, too);
- Avoid capital gains taxes;
- Receive an income tax deduction;
- Have professional asset management;
- AND MAKE A VERY IMPORTANT FUTURE GIFT TO THE ACADEMY!

Please write or call for our informative brochure which describes the Academy's Life Income Trusts, as well as other ways to combine gift and personal planning. Just telephone the Development Office at (415) 750-7216 and ask for information about Life Income Gifts, or use the reply coupon on the last page of the newsletter.



Outstanding Volunteer

It seems appropriate to inaugurate this new feature with veteran volunteer Eleanor Visser. Eleanor joined the Docent Council in 1977 and completed training for all the Academy's major exhibit halls. She was soon teaching some of the classes herself, developing resources for both docents and teachers, and assisting with administrative and development functions. She has just completed three years as Chairman of the Docent Council, leading the organization to meet the challenges of a changing work force and more sophisticated audiences.

Eleanor also spends many hours each week in the Osher Molecular Lab, where she provides an invaluable service to the Research Division by assisting with DNA analyses to determine phylogenetic relationships of various organisms. She received the 1993 Academy Fellows' Distinguished Service Award for her work in this capacity. The Academy wishes to thank Eleanor for her remarkable contributions to our mission to explore and explain the natural world. To be a volunteer, call Diane Butler at 750-7153.

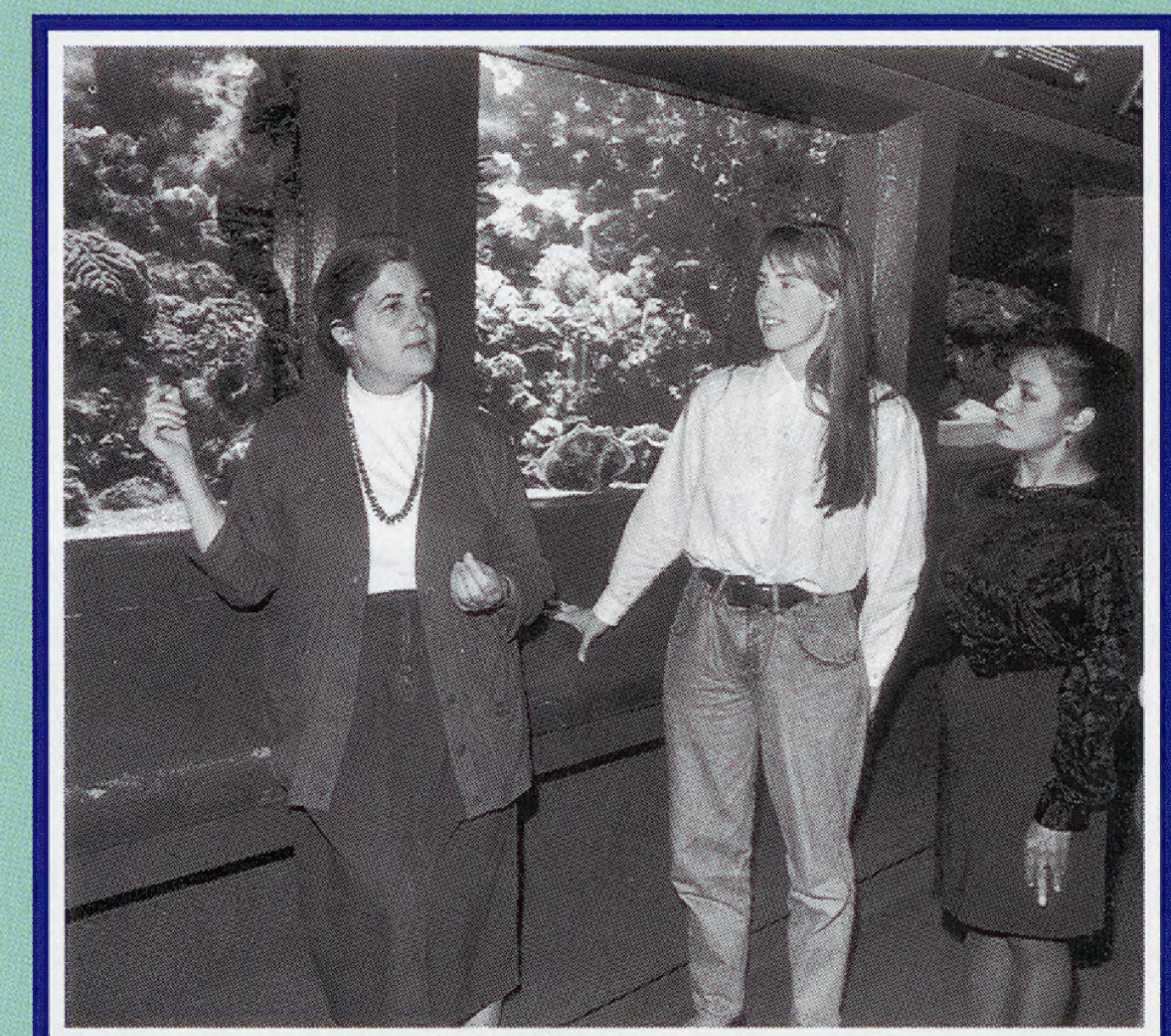


PHOTO: CAROLINE KOPP

October

Women in Evolution: Man the Hunter Meets his Match

with Adrienne Zihlman, CAS Fellow
and Trustee, and Professor at UC Santa Cruz

The roles of women and men during human evolution inspire endless speculation about mating patterns, social relationships and family life. Most reconstructions tell us that men hunted and scavenged, and that women were bound to a mate and dependent upon him for food and protection. Although touted in popular literature and in paleoanthropology textbooks, this view does not hold up under scrutiny. On the contrary, females are revealed to be active participants in food gathering, tool use and protection of offspring, and in most primate societies are the nucleus of the social group.

Adrienne Zihlman is Professor of Anthropology at University of California, Santa Cruz, a Fellow of the American Association for the Advancement of Science, and a Fellow and Science Trustee of the California Academy of Sciences. Her research focuses on the locomotion of apes and early hominids, the role of women in evolution, and the biology and behavior of chimpanzees (*Pan paniscus* or "bonobo" and *Pan troglodytes*). She has authored numerous scientific publications on human evolution and *The Human Evolution Coloring Book*, and is a contributor and co-editor of the recent volume *The Evolving Female: A Life History Perspective* (Princeton Press 1997).

Wednesday, October 8 at 2 & 7:30 pm

November

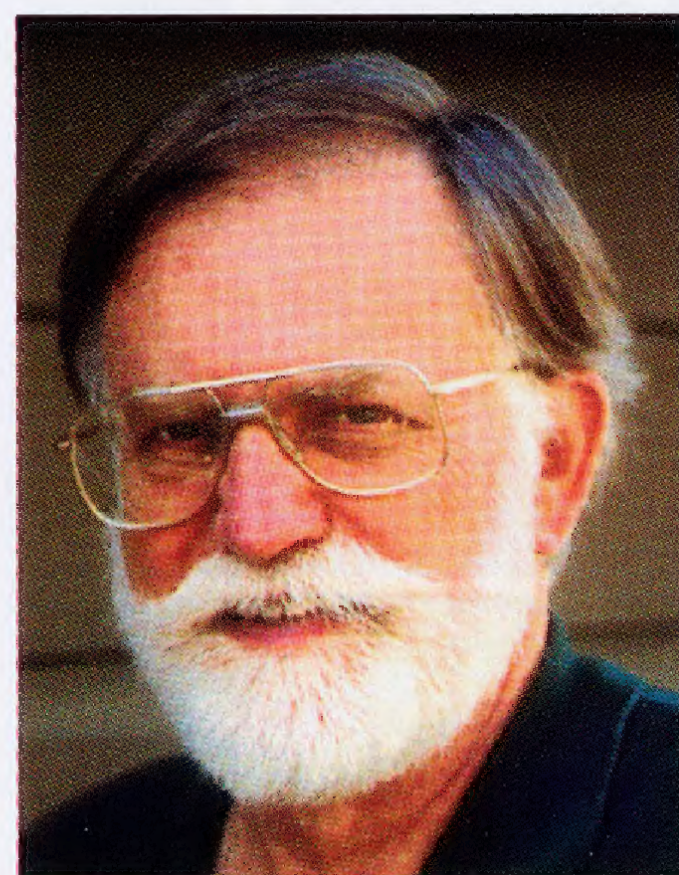
Origins of the Bay

with Kenneth R. Lajoie, Geologist with
U.S. Department of the Interior Geological Survey

During the last ice age some fifteen thousand years ago, sea level was about 360 feet below its present level, and there was no San Francisco Bay. The beach was out at the Farallon Islands, and the bay basin was just a broad valley.

Our bay, like any other natural body of standing water, consists of a large container (the tectonic basin) and two sources of water; one salty, and the other fresh. The bay basin was formed by tectonic forces in the Earth's crust over the past 3.5 million years. The tectonic block between the Hayward and San Andreas faults is being pushed down, while the blocks on either side are being pushed up.

Geologist Kenneth Lajoie has been with the U.S. Geological



Kenneth Lajoie

Survey in Menlo Park since 1970. During that time he has studied various aspects of the geology of the Bay Area, concentrating mainly on earthquake hazards. His lecture on the amazing origins of our Bay will be a wonderful introduction to our newest permanent exhibit, EARTHQUAKE!, due to open soon.

Tuesday, November 11 at 2 & 7:30 pm

Special Members Lecture

Spider Hunting Around the World

Dr. Charles Griswold, Academy Arachnidologist

The Academy has one of the world's most important research collections, with a great number of spider specimens from the remotest parts of the world. Dr. Charles Griswold will present a slide-illustrated lecture discussing how generations of Academy scientists have built this collection. He will also show slides of expeditions to remote, wild places, and of the spiders found there.



Dr. Charles Griswold

Dr. Griswold will discuss how our collection is used in research and education, and present examples from his own research on the evolution of webs, the history of African rain forests, and the search for the deadliest spider in the world!

Wednesday, November 5 at 6:30 pm (auditorium)

Members meetings are a benefit of membership. Present your membership card at both the front entrance and the auditorium. Members' guests can purchase tickets for \$10 each for adults and \$5 for children at the Membership Booth at the main Academy entrance. Please note: Only the main entrance will be open for the evening lectures.

Upcoming Members Lectures & Events

Wednesday, December 10

Members Holiday Shopping Evening from 6 to 9 pm
Members lecture: The search for Extraterrestrials with Seth Shostak, Scientist, SETI Institute, 7:30 pm

Tuesday, January 13

The Water World of Palau & The Philippines with Gary Williams, CAS Curator of Invertebrate Zoology and Geology

Benjamin Dean Lectures

Stellar Lifetimes

Understanding the structure and evolution of stars has been one of the focal points of astronomy and astrophysics research for the past three decades. This is one of the best understood areas in astronomy, and some remarkable facts have come to light. One of these is that many of the chemical elements in the Solar System, Earth and our bodies have been synthesized in stars. A second is that there is a limit to the age of stars in the Galaxy.

Dr. Michael Bolte is a member of the faculty at the University of California, Santa Cruz. In his talk, he will discuss how stars are observed and modelled, the details of stellar "alchemy", and the processes by which newly minted elements are redistributed into the interstellar medium. The methods by which the ages of stars are estimated will also be presented, and the age of the Galaxy discussed.

Tuesday, October 21 at 7:30 pm

Tickets: \$3 each

The Ultimate Sunset

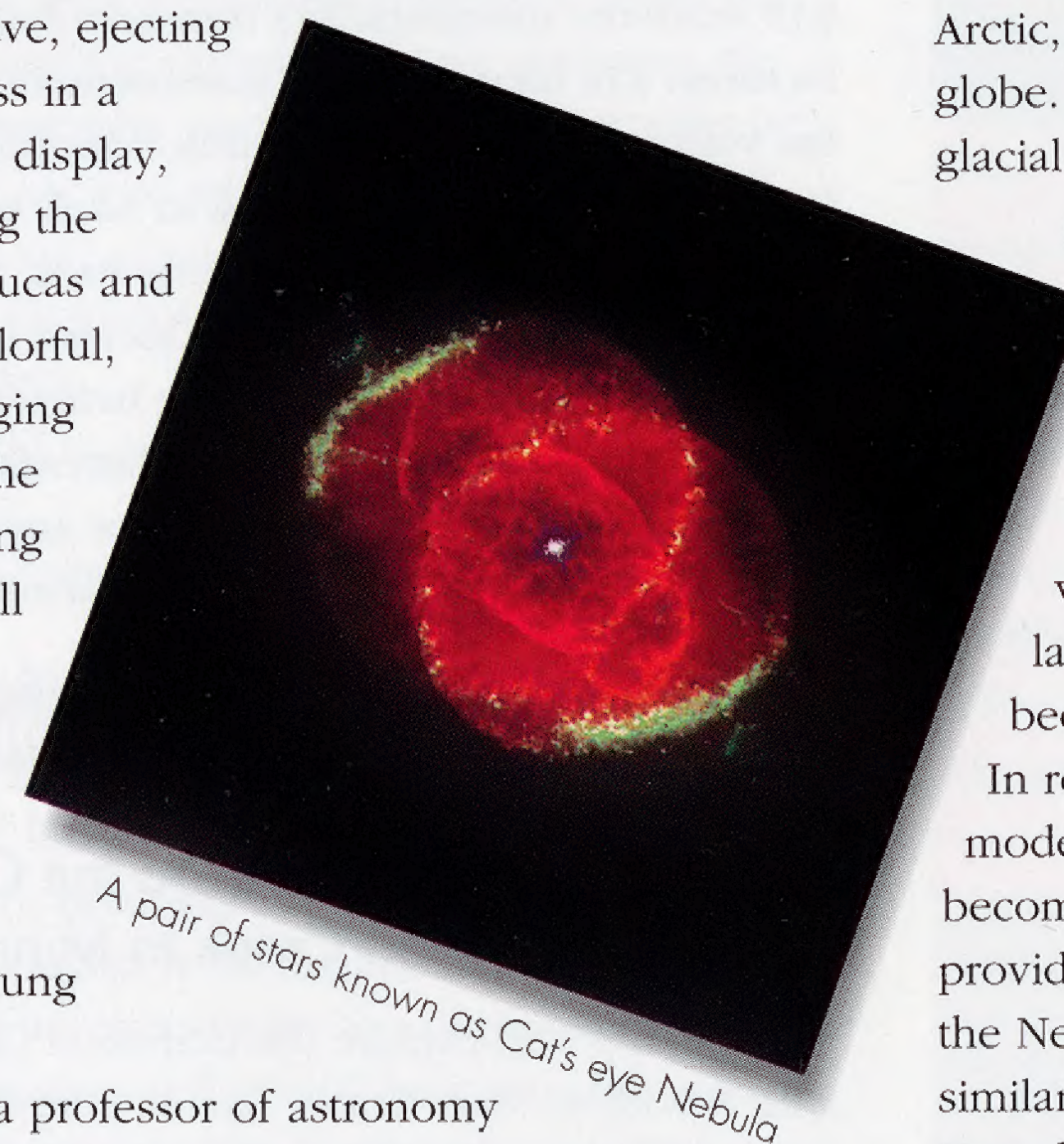
It is five billion years from now. The Sun is rapidly approaching its final destiny. Recently a blinding red giant star, the Sun, has just scorched the surface of the earth, obliterating all signs of life and its monuments. As the end nears the Sun's insides suddenly heave, ejecting almost half of its mass in a dazzling pyrotechnic display, majestically upstaging the imagery of George Lucas and Steven Spielberg. Colorful, symmetric and changing patterns form from the quietly violent swirling material. The Sun will have created a "planetary nebula" which, when seen from afar, appears like the blink of a holiday firecracker hung on the Milky Way.

Bruce Balick is a professor of astronomy at the University of Washington in Seattle. His primary interests are astrophysical nebulae and physics of their evolution. In his talk, he will explore what we know, and how we came to understand it through the years of research and the challenging new results from the Hubble Space Telescope.

Tuesday, November 11 at 7:30 pm

Tickets: \$3 each

The Benjamin Dean Lecture series through December has a general theme of stellar evolution. The next speaker will be Dr. Alex Filippenko (12/16) on the End of Massive Stars.



A pair of stars known as Cat's eye Nebula

Downtown Series

To make its resources easily available to the downtown San Francisco working crowd, the Academy of Sciences is continuing its series of lectures at San Francisco State University's Downtown Extension Center. The Spring 1997 Downtown Series features Fellows of the Academy of Sciences. The Fellows are a select group of eminent scientists representing the full range of disciplines within the natural sciences. They form the governing body whose predecessors founded the California Academy of Sciences 144 years ago. The Fellows are nominated by their colleagues, appointed by the Board of Trustees and recommended by the Academy's Science Council in recognition of contributions to scholarship in their field of study.

Spiders in the Wind

with Larry Swan

Salticid spiders live at higher altitudes than any other animals. They have been collected at 22,000 ft. on Mt. Everest. They feed on anthomyid flies that, in turn, live on wind-borne nutrients such as pollen and pieces of plants and animals. Spiders are key predators of a newly recognized zone of life that exists beyond the Alpine and Tundra Biomes. This zone, whose food chain is based on windblown debris, is called the Aeolian Biome. The Aeolian phenomena exists in the far Arctic, Antarctica and other extreme environments around the globe. Join Dr. Swan and venture to the ice, snow and glacial-filled wild places where these spiders thrive.

Friday, November 7

Who Were the Neanderthals?

with Nina Jablonski

The Neanderthals were a group of ancient humans who inhabited Europe and the Near East during the latter part of the Ice Age. Their biology and culture have been subjects of fascination and speculation for decades. In recent years, the question of their genetic relationship to modern humans has been explored in great detail. Did they become extinct, or are they living next door? This lecture will provide an overview of our current state of knowledge about the Neanderthals, with emphasis placed on recognizing similarities and differences in anatomy and lifestyle between Neanderthals and modern humans.

Friday, November 14

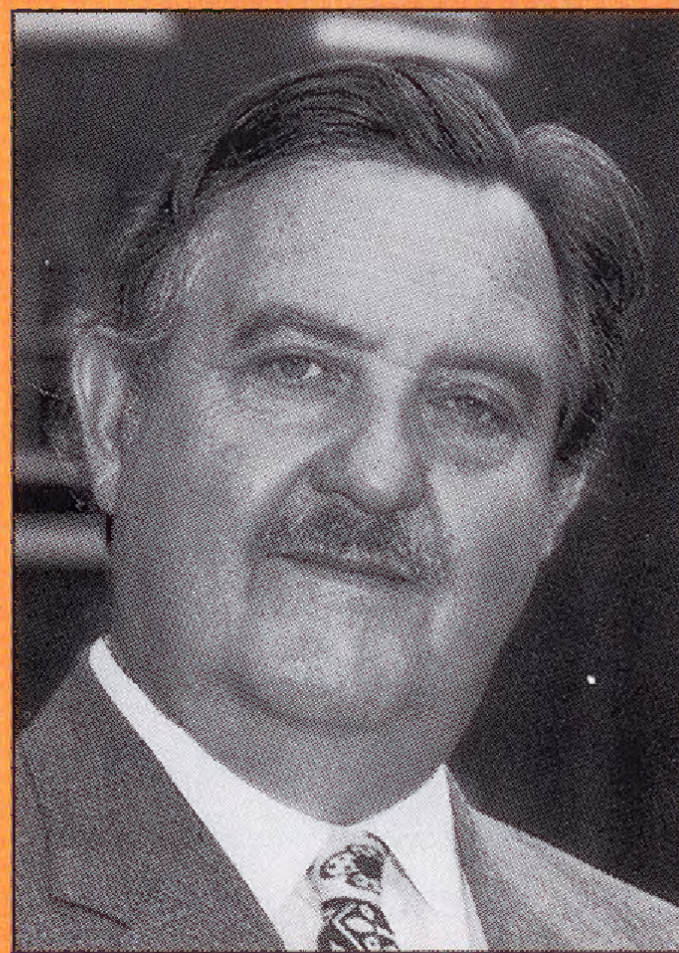
Preparation for the Next Great Bay Area Earthquake

with Bruce Bolt

Although the dates of the next damaging earthquakes on the San Andreas and Hayward faults cannot be predicted, their intensities and effects can. For 28 years, Dr. Bruce Bolt has been Director of the network of seismographic observatories

Special Tour and Lectures:

Plants and Gardens for the Future



Professor Grenville L. Lucas

In connection with the new exhibit, *Margaret Mee: Return to the Amazon*, the Academy will offer a free opening highlight tour and lecture on Wednesday, October 22.

Beginning at 7 pm, Ruth Stiff, Curator of North American Exhibitions for the Royal Botanical Gardens of Kew, will give a highlight tour of the exhibit. The tour will be followed by a lecture at 7:45 pm with Dr. Grenville L. Lucas, founder of the Plant Conservation Unit at Kew Gardens.

The new establishment of the World Seed Bank at Kew Gardens and the development of new techniques in plant propagation (such as tissue culture), gives home gardeners the potential to branch out with new species and varieties. In fact, as natural habitats diminish and many plant species face extinction in the wild, it will become more important for gardeners to grow and raise a wider variety of plants that would otherwise disappear. If you would like to join us for this free special evening, please use the order form for tickets.

Wednesday, October 22 (No Cost)

Highlight Tour with Ruth Stiff (Wattis Hall), 7 pm

Lecture with Dr. Grenville L. Lucas (Auditorium), 7:45 pm

Grandmothers, Menopause and Human Evolution

with Kristen Hawkes

Observations among modern hunter-gatherers suggest that grandmothering could explain the long post-menopausal lifespans that distinguish humans from other apes. This "grandmother" hypothesis challenges some long-standing ideas about expanded learning and parental provisioning in human evolution.

Kristin Hawkes has been a leader in bringing a theoretical framework and rigorous quantitative methods to the study of contemporary hunter-gatherers. She is a professor and currently the Chairman in the Department of Anthropology at the University of Utah, Salt Lake City. For tickets to this lecture, please call (415) 750-7128.

Monday, November 3 at 7 pm (Auditorium)

Reception: 6 pm (Wild California)

Lecture Only: Member \$6/Non-Member: \$10

Lecture and Reception: Member \$36/Non-Member: \$45

This lecture is co-sponsored by The Leakey Foundation.

operated by the University of California in Northern California. In this talk he will explain the latest seismic hazard evaluation methods and results for the Bay Area. He will also compare the great local earthquakes of 1868 and 1906 with the recent Loma Prieta, Northridge, and Kobe earthquakes. The seismic retrofit and replacement on Bay Area bridges will be included in the discussion.

Friday, November 21

Jewels of the Plant World: Fresh Water Diatoms and Other Amazing Microbes

with Patrick Kociolek, Director of Research at CAS

Diatoms and other assorted microscopic life can be found in almost every aquatic ecosystem imaginable, from salty inland lakes to the freshest springs and streams; in the cleanest waters and the most polluted aquatic environments. They represent a wide range of morphological diversity and life history strategies, and are the base of the food chain in most aquatic ecosystems. Diatoms also produce much of the oxygen we breath. This lecture will cover the amazing diversity of forms and functions of these microbes, and the important ecological and practical roles they play.

Friday, December 5

All lectures take place Friday evenings from 5:45 pm to 7:15 pm

You may sign up for the series of four lectures:

\$35 Academy members/\$45 non-members; or for individual lectures: \$10 members/\$12 non-members. To sign up, please fax your order form to the Adult Education Department at (415) 750-7367, or send a check to Adult Education, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. The Downtown Center is located at 425 Market Street (at Fremont). Parking is available below the building for \$6 after 5 pm The center is near the Embarcadero and Montgomery BART and MUNI stations. If you have any questions please contact the CAS Adult Education Department at (415) 750-7100.

Adult Education

Follow a Creek to the Ocean: Redwood Creek to Muir Beach

This day trip will explore the Redwood Creek watershed from Muir Woods to Muir Beach. Examine fresh, brackish and salt water habitats as we follow the creek downstream. Close looks at the plant and animal life along the creek will thrill the young explorer. Activities include dip nets, insect studies and water quality testing. Discover the life-cycle of the salmon and look for the relationships between the critters that share this varied neighborhood. The day ends at the beach with water tales. Recommended for families with children ages 4-8.

Saturday, November 1 from 9:30 am to 2:30 pm

Instructors: Steve Cochrane and Lisa Frost

\$25 adults/\$20 children (members)

\$30 adults/\$25 children (nonmembers)

(Transportation not included)

Life on the Edge: Teaching About the Seashore

We are fortunate indeed to live on the continent's edge. The ocean determines our weather patterns, gives us oxygen (from phytoplankton), provides us with delicious food, and give us enjoyment in the forms of recreation and natural beauty. The habitats on the edge of the rocky seashores and sandy beaches are among the best places for children to study. They are accessible, understandable, and important to learn about as our growing population continues to impact them. This workshop will give you, as educator or parent, the tools to teach about seashores both in the classroom and on field trips. First we'll be in the classroom studying tides, sand, seaweed, intertidal zones, and general ecology of rocky seashores and sandy beaches. The discussion will include teaching resources and good field trips to Fitzgerald Marine Reserve in Moss Beach. Learn how to lead your own tidepool field trip as we spend the late afternoon on the rocky shore observing tidepool life. This workshop is for educators (and parents) of students in grades K-6.

Class: Saturday, November 8 from 2 to 5 pm

Field Trip: Saturday, November 15 from 2 to 6 pm

Instructor: Ginger Parish

\$45 members/\$55 non-members

(Transportation not included)

How To Use A Map and Compass

Don't get lost on your next wilderness adventure. Learn the Silva compass technique for navigating in the outdoors. We focus on reading topographic maps and using a compass to figure out where you are and where you want to go. You'll practice finding your way around an actual course set up near the Academy in Golden Gate Park. Each participant will need their own compass.

Saturday, November 22 from 10:00 am to 2:30 pm

Instructor: Jim Wiltens

\$40 members/\$50 non-members

Inside Morrison Planetarium

Join us as we examine the inner workings of the Morrison Planetarium. You will learn how our shows are produced, how special effects are executed and what steps a show takes from the first vague concept to its final public performance. Participants will have an opportunity to examine the Planetarium during its "changeover" period between shows and discuss how, like the universe, the Academy's own "Theater of Stars" evolves from a state of chaos to one of cosmic order.

Wednesday, December 3 from 7:00 to 9:00 pm

Instructor: Bing Quock

\$15 members/\$20 non-members

To register and for more information about these and other classes, use the order form or contact the adult and family education program at (415) 750-7100.

The Wildlife Talks 1997-1998

Wildlife in War: Conservation Challenges in the New Congo

with Terese Hart

Civil unrest, corrupt political systems and floods of refugees have taken their toll on the inhabitants of the former nation of Zaire. In the face of this tumultuous social climate, Wildlife

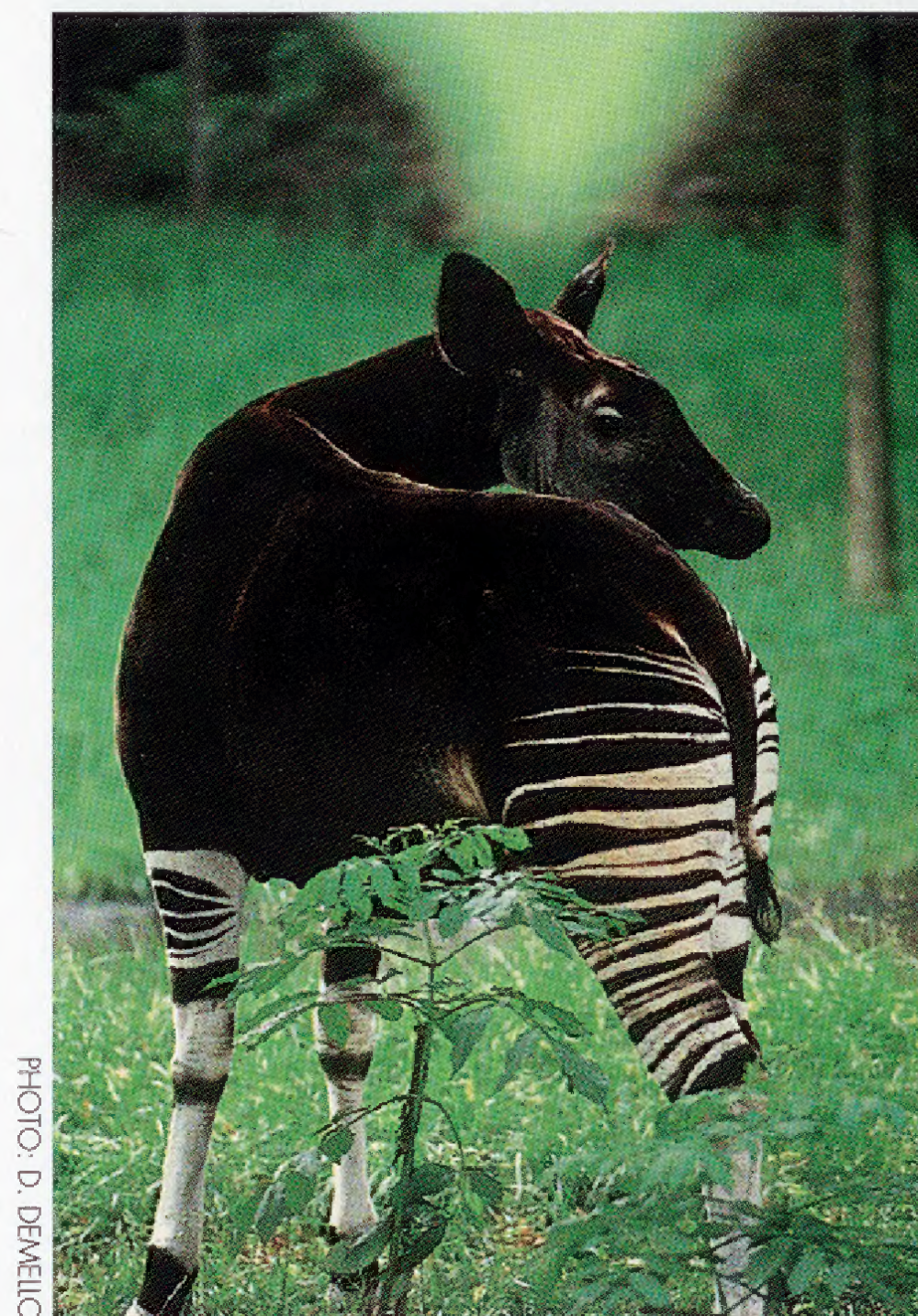


PHOTO: D. DEWELO

Okapi

Conservation Society researchers Dr. Terese Hart and her colleagues keep a glimmer of conservation alive deep within the Ituri Forest.

Since the 1970's Dr. Hart has made strides in protecting the country's rich display of biodiversity. She and her husband Dr. John Hart were instrumental in establishing the 5,000 square-mile Okapi Wildlife

Reserve, home to the elusive giraffe relative and scores of other species. Today, she co-directs the Center for Research and Training in Forest Conservation, based in the new Congo.

On Thursday, November 6, Dr. Hart will unfold layers of flora and fauna as she describes the Ituri Forest, then and now. She will also share her strategy for keeping this unique ecosystem intact. The talk begins at 7:30 pm in the auditorium. A reception will precede the lecture at 6:30 pm.

November 6, 1997

The Wildlife Talks Pricing:

For Lecture only

Member: \$6 per lecture/\$18 for the series

Nonmember: \$10 per lecture/\$30 for the series

For Lecture and Reception

Member: \$36 per lecture/reception/\$100 for the series

Non-Member: \$45 per lecture/reception/\$145 for the series

For tickets, please use the order form. For more information, please call (415) 750-7128 or visit the Wildlife Conservation Society website at www.wcs.org.

Return to the Amazon: the Watercolors of Margaret Mee

October 18 through January 4, 1998

Margaret Mee has been called the premier female explorer of the Brazilian rain forest and an outstanding botanical artist, acclaimed worldwide by both botanists and art critics. Hers was one of the first courageous voices raised against the destructive exploitation of Amazonia, and she remained an important international spokeswoman for conservation until her death in 1988.

Margaret Mee's life, work and legacy, portrayed through her magnificent watercolors, are the focus of this exhibition.



Selenicereus wittii, 1988 by Margaret Mee

© Organized by the Royal Botanic Gardens, Kew and the Houston Museum of Natural Science in association with the Margaret Mee Amazon Trust and the American Society for the Royal Botanic Gardens, Kew.

This exhibit includes over 80 paintings that reveal the beauty and diversity of plants, animals, peoples and cultures of the Amazon. Return to the Amazon will be at the Academy from October 18 through January 4, 1998, and is sure to be admired by art lovers and conservationists alike.

Offshore: Paintings of the Farallones

Through November 23, 1998

The works of four local contemporary artists are displayed in this exhibit portraying the beauty of the rocky and sea battered Farallon Islands. Located approximately twenty-five miles west of the Golden Gate, the Farallones are a chain of small granitic islands designated as a National Wildlife refuge. This exhibit is a rare opportunity for the public to view four artists' interpretations of the islands' vistas.

The artists contributing to this exhibition include Jerrold Ballaine, Tony King, Jack Stuppin, and William Wheeler, all of whom are noted for their *en plein air* ("in the open air") technique of painting.

This exhibit is dedicated to the biologists who study the ecology of these islands.



Main Top, 1995 by Jack Stuppin, in the collection of John Fitzgibbon

Members Notes

Protect Your Membership:

To help guard against unauthorized use of your member card, please show your ID when you present your personal membership card at the entrance. Please know that while your guest passes are transferable, your personal membership cards are not.

Affinity Credit Card Program:

By now many of you may have received an offer introducing the new California Academy of Sciences Mastercard with the dinosaurs Deinonychus in the LIFE THROUGH TIME exhibit. This special card will contribute revenue to important programs here at the Academy every time you use it. If you are a new member and joined after November 1996, please call the Membership Office at (415) 750-7111, or stop by the Membership booth to pick up an application.

Holiday Gift Giving for Groups:

This holiday season, give your favorite social agency or non-profit organization a Group Membership. For \$250 per year, Group Members are offered unlimited access to the Academy for up to eight people. The Academy receives the revenue, and you receive that wonderful feeling that lasts all year of doing something for a worthy non-profit group of your choice. Call Group Membership at (415) 750-7112 for the brochure.

Traditional Arts of the World

Explore cultural traditions from around the world in these one-hour presentations held Saturdays. All programs take place at 1 p.m. on select Saturdays and last about an hour. Presentations are free after general admission to the museum. For further information on these and other Traditional Arts programs, contact Almudena Ortiz at (415) 750-7165. The Traditional Arts program is funded by the Paul L. and Phyllis Wattis Foundation.

October 4: Flamenco Dance

Monica Bermudez and her Flamenco company will dance to the traditional music of southern Spain.

October 18: Music from the Andes

The duo *Chaskinakuy*, meaning "to receive from hand to hand among many people" in the Quechua language, will play a wide variety of instruments and melodies from the Mestizo tradition in the Andes. Music includes love songs, courtship and agricultural songs, and neo-traditional compositions.

November 1: Latin American Puppetry

The Mascaritas Puppet Theater will demonstrate customs surrounding Day of the Dead, or *Día de los Muertos*, celebrated on November 1st in Latin American countries

November 15: Trinidadian Steel Drum Music

Members of Pan Ramajay Band will be joined by legendary pannist Ray Holman for a performance of steel drum rhythms. Pan Ramajay's playing is a blend of calypso with Latin, Brazilian and jazz influences.

November 22: Jewish Folk Chorus

Established 71 years ago, The Jewish Folk Chorus of San Francisco will sing traditional tunes in Yiddish, Hebrew and Ladino.



The Jewish Folk Chorus of San Francisco



Chaskinsky; Music of the Andes

Special Traditional Arts Program

October 9-12: Turkish Carpet Weaving

Village weavers from the DOBAG women's cooperative in Western Turkey make a special visit to the Academy to demonstrate the handknitting techniques of woolen pile carpets. These village carpets are made entirely by hand. Weavers spin the wool on rotating drop spindle, collect local plants for processing natural dyes, and spend months patiently weaving traditional designs handed down from mother to for centuries. This program is co-sponsored by Return to Tradition, the DOBAG gallery in San Francisco.

October 9-12, African Hall
10 am to 5 pm

The Celtic Way

A one-day workshop on the rituals and customs observed in the Celtic calendar, from Samhain (New Year) to Lughnasa (Harvest Festival).

Eddie Stack takes us on a journey through the Celtic year, describing the important feastdays and other celebrations, their origins and cultural significance. Highly in tune with nature, the Celts lived close to Mother Earth and led a life dictated by seasons, climate and environment. Celtic traditions are rooted in the mists of prehistory and encompass ancient myths, legends, folklore and social customs.

Eddie Stack is co-founder of the Irish Arts Foundation and teaches Irish Studies at New College, San Francisco. Born in West Clare, Ireland, Eddie grew up with the old folk traditions of the region. To register for this workshop, please use the order form. For further information, contact June Anderson at (415) 750-7164.

Saturday, October 25 from 10 am to 4 pm (Goethe Room)
Cost: \$50 per person (Pre-registration essential)

Morrison Planetarium Turns 45!

On November 8, 1952, San Franciscans and visitors opened their eyes to a new universe as the Academy's Morrison Planetarium opened its doors to the public. Inside a domed theater christened the "Theater of the Stars," the unique, Academy-built star projector simulated the starry night sky with an unprecedented realism, garnering for the Academy staff a reputation for quality and inventiveness that was recognized around the world. For nearly a half-century, the small but dedicated staff of the Morrison Planetarium have brought the wonders of the cosmos down to Earth, explaining the workings of the heavens through Planetarium shows, demonstrations, skywatching events, and media appearances.

Great Shakes! continues in Northern California's largest indoor universe, exploring the causes of world-shaking (star-shaking) events. Presented daily through Sunday, November 30, with showings Monday through Friday at 2 pm and on weekends at 2 & 4 pm *A Tour of the Universe* continues on weekends at 1 & 3 pm, ending on November 30. *Neighbors in Space*, a tour of the solar system for children and their families, and *Star Talk*, a look at the night sky over San Francisco, also continue on weekends at 11 am and 12 noon, respectively.

Laserium

The world's first continuing laser concert scares up a special presentation for October with *Fright Lights*, featuring Halloween-themed music accompanied by multi-colored laser effects and spooky, animated graphics under the Planetarium's dark, star-filled skies. Other Laserium shows feature a variety of music from Pink Floyd to techno. For full information and schedules, please call (415) 750-7138 or log on to www.laserium.com

Members are reminded that they receive a discount at the door for regular (ages 13-64) admission to Laserium.

October-November Sky Show Schedule

Sky Show	Weekday	Weekend
Great Shakes!	2 pm	2 & 4 pm
Tour of the Universe (ending date: November 30)	1 & 3 pm	
Startalk	12 pm	
Neighbors in Space	11 am	

Please note that the planetarium will be closed on Thursday, November 27 (Thanksgiving Day). On Friday, November 28 the weekend Sky Show schedule will be in effect with hourly shows from 11 am to 4 pm.

Academy Travel

Lake Baikal and the Great Siberian Taiga

August 9 - 23, 1998

with Dr. Patrick Kocielek,
Director of Research at CAS

Lake Baikal is sometimes known as the "Galapagos Islands of Russia" in that it is the country's single richest reservoir of unique flora and fauna. It is also the oldest and deepest lake in the world, storing nearly 20 percent of the freshwater on earth. Lake Baikal contains more than 1,500 species unique to Baikal and hundreds more endemics on the surrounding mountainsides.

At Lake Baikal, you will board the MV ZAISAN (a 20 passenger ship) and will venture more than 250 miles up the lake, visiting Pribaidalsky and Zabaikalsky National Parks; Maloe More (the "small sea"); and Olkhon Island, to visit the fishing village, school and museum. You will also see Baikal's Famous "Shaman Rock", the Ushlanyi Islands, 1000-year-old petroglyphs, and the Selenga Delta, a spectacular bird and wildlife refuge.

The journey begins in Khabarovsk on Trans Siberian Express for a two and one-half day adventure across Siberian taiga, a land of grand rivers, lush forest and charming small villages. This classic train journey will include lectures by your expedition leaders and a chance to practice Russian conversation.

Cost: To be announced

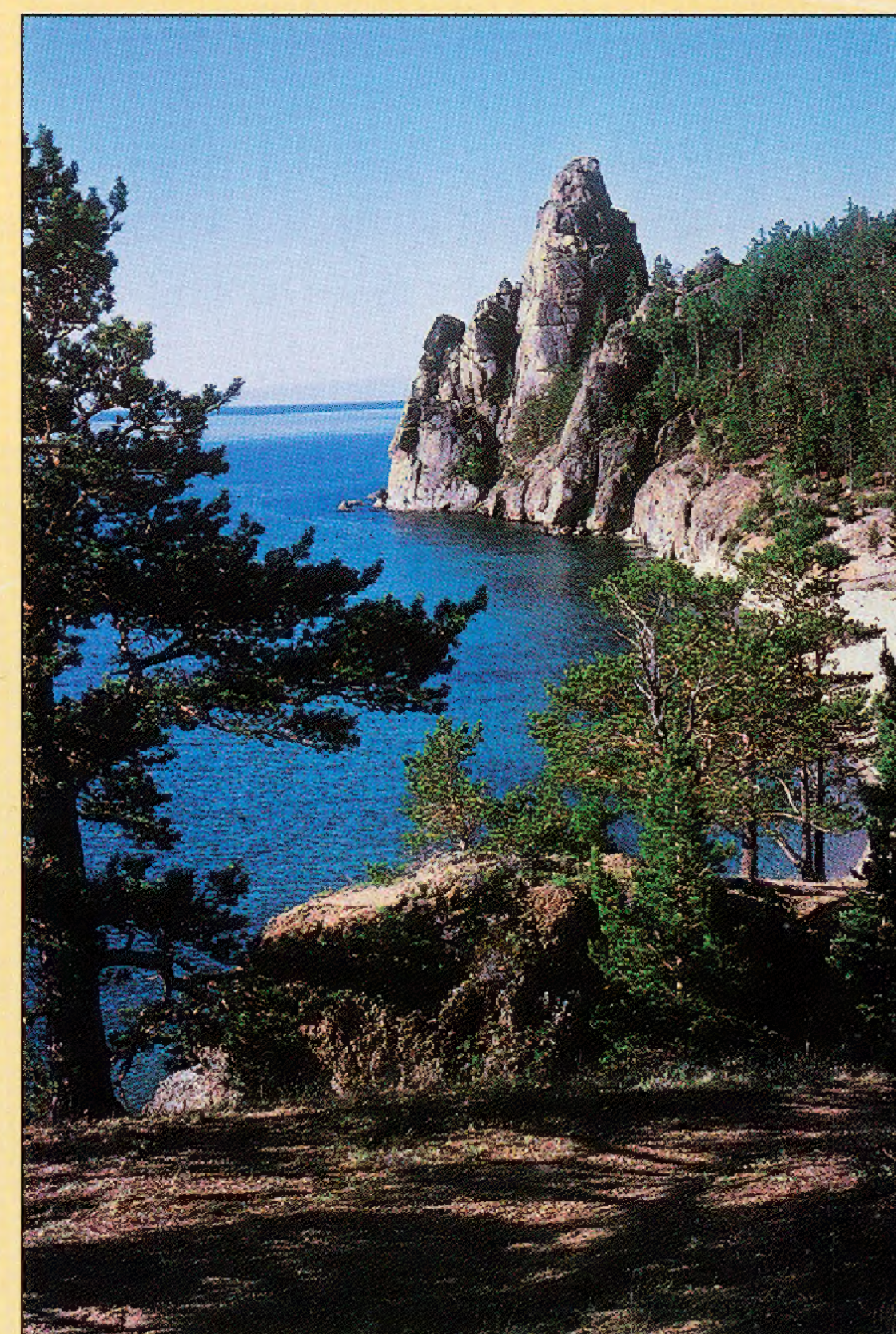


PHOTO: ROBERT NANSEN

For detailed itineraries on this and other tours please call Deidre Kernan at (415) 750-7348.

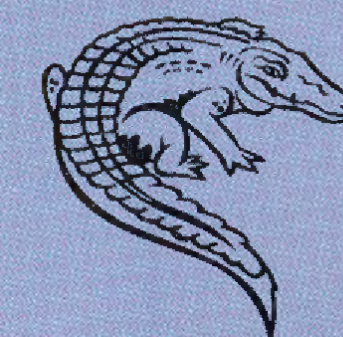
Kid Stuff

Did you know...

... that a grizzly bear can sprint 50 yards in three seconds?



... that crows are generally considered to be the "intellectual giants" of the bird world?



... that the gender of an alligator is determined by the temperature at which the egg is incubated?

... that Mercury revolves around the Sun faster than any other planet in the solar system?

... that the greatest altitude at which a spider has been found is 22,000 feet?



... that thousands of meteorites – most the size of dust particles – fall to the Earth's surface every day?

... that fossils are less likely to form on steep mountain slopes because sediment is unable to build up?



... that about 80% of all bird species in the world inhabit wetlands?

... that February is the only month that may not have a full moon? This will happen again in 1999.

... that Olympus Mons, a volcano found on Mars, is the largest volcano found in the galaxy? It is 370 miles across and 15 miles high.

... that the only mammal capable of sustained flight are bats?



... that a byte, a common unit of computer storage, is the equivalent of a single character?

Join in the Fun at the Junior Academy Fall Saturday Workshops

Hosts & Their "Guests"

There are many organisms that live in or on an organism of another species. Understanding the life cycles of these organisms is important to health and well-being. We'll investigate some basic groups of parasites such as ticks and worms by studying them under the microscope. Check out what it takes to be a parasitologist!

Instructor: Ashleigh Smythe

Ages 9-16; Saturday, November 1 from 9 am to noon

Cost: \$25

Spiders!

Come run with the wolf spiders and jump with the jumping spiders at the Academy's exciting visiting exhibit, *Spiders!* Discover the architecture of spider webs and the secrets of these amazing animals as you search for spiders and spin your own web in Golden Gate Park.

Instructor: Jack Laws

Ages 6-8 years; Saturday, November 8 from 10 am to noon

Cost: \$20

Ages 9-16 years; Saturday, November 15 from 9am to noon

Cost: \$25

Field Trip: Tracks & Tracking

Calling all amateur sleuths: It's time to sharpen our tracking skills and to read the stories left in the mud after the rains. Pack a good lunch for this all-day field trip to Marin County. Learn how to identify the tracks of local Bay Area animals and discover secrets that will tell you the animal's speed and pace from the tracks.

Instructor: Jack Laws

Ages 10-16 years; Saturday, November 22 from 9am to 5 pm

Cost: \$40 (Transportation included)

Please call (415) 750-7100 for class availability.



Kids love their experiences at the Academy.

Order Form

ADULT EDUCATION

Qty/Members	Qty/Nonmembers	Total
Follow a Creek to the Ocean/Nov. 1	x \$25 (adults) x \$30 (adults)	=
	x \$25 (children) x \$30 (children)	=
Life on the Edge/Nov. 8 and Nov. 15	x \$45 x \$55	=
How To Use A Map and Compass/Nov. 22	x \$40 x \$50	=
Inside Morrison Planetarium/Dec. 3	x \$15 x \$20	=

ANTHROPOLOGY WORKSHOP

Quantity	Total
The Celtic Way/Oct. 25	x \$50 =

B. DEAN LECTURE SERIES

Quantity	Total
Stellar Lifetimes/Oct. 21	x \$3 =
The End of Normal Stars/Nov. 11	x \$3 =
The End of Massive Stars/Dec. 16	x \$3 =

DOWNTOWN LECTURE SERIES

Qty/Members	Qty/Nonmembers	Total
Series of four lectures	x \$35 x \$45	=
Spiders in the Wind/Nov. 7	x \$10 x \$12	=
Who Were the Neanderthals?/Nov. 14	x \$10 x \$12	=
Preparation For the Next Earthquake/Nov. 21	x \$10 x \$12	=
Jewels of the Plant World/Dec. 5	x \$10 x \$12	=

JUNIOR ACADEMY

Quantity	Total
Hosts & Their "Guests"/Nov. 1	x \$25 =
Spiders!/Nov. 8	x \$20 (ages 6-8) =
Spiders!/Nov. 15	x \$25 (ages 9-16) =
Tracks & Tracking/Nov. 22	x \$40 =

SPECIAL EVENTS

Qty/Adults	Qty/Children	Total
Shakin' Sharks Halloween Party/Oct. 24	x \$75 free	=

SPECIAL LECTURES

Qty/Members	Qty/Nonmembers	Total
Plants and Gardens for the Future/Oct. 22	Free	=
Grandmothers, Menopause & Evolution/Nov. 3	x \$6 x \$10	=

THE WILDLIFE TALKS

Qty/Members	Qty/Nonmembers	Total
Wildlife in War/Nov. 6		
lecture only	x \$6 x \$10	=
lecture series	x \$18 x \$30	=
lecture and reception	x \$36 x \$45	=
lecture and reception series	x \$100 x \$145	=

DONATIONS

- ☐ I would like to support the Academy of Sciences with a donation. \$ _____
- ☐ Please send me information about life income gifts and bequests to the Academy

GIFT MEMBERSHIP FORM

I wish to give a gift membership to: _____

Address _____ City _____

State _____ Zip _____ Phone () _____

\$45 Individual \$60 Family or Grandparent

\$40 Dual Senior \$35 Senior \$125 Curators Circle

Payment enclosed: _____

TOTAL PAYMENT ENCLOSED \$ _____ ☐ Check (made payable to CAS)

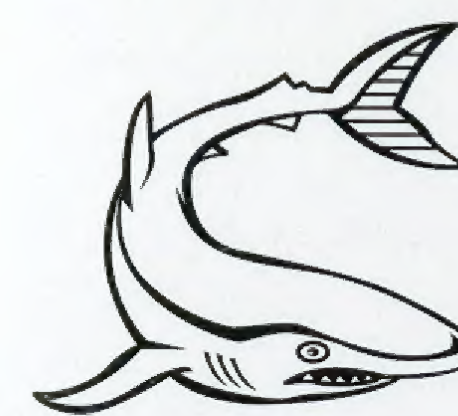
☐ Visa ☐ Mastercard ☐ American Express (\$10 minimum on credit card orders)

Card Number _____ Exp. Date _____

Daytime Phone _____

Mail payment and order form to: Membership Office, Ticket Services, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-4599. Include a self-addressed, stamped envelope for each series to which you subscribe. No refunds/exchanges.

Shakin' Sharks, It's Halloween!



It's time to polish up your fangs and strap on your fins for the Academy of Sciences' annual Halloween party on Friday, October 24 from 6:30 to 9 p.m. This year's event will be centered around the Academy's new Shark Tank where guests will be introduced to live baby sharks, "fish" for Halloween goodies, go fish printing, and enjoy other fun and educational activities. Kids and families will also meet Academy scientists and get close to some of the creepiest specimens in the Academy's research collections. A buffet by McCall's and live music make it a full night of fun for all. Costumes are encouraged!

Admission is \$75 per adult; children accompanied by an adult get in free. To purchase tickets, please send payment with the order



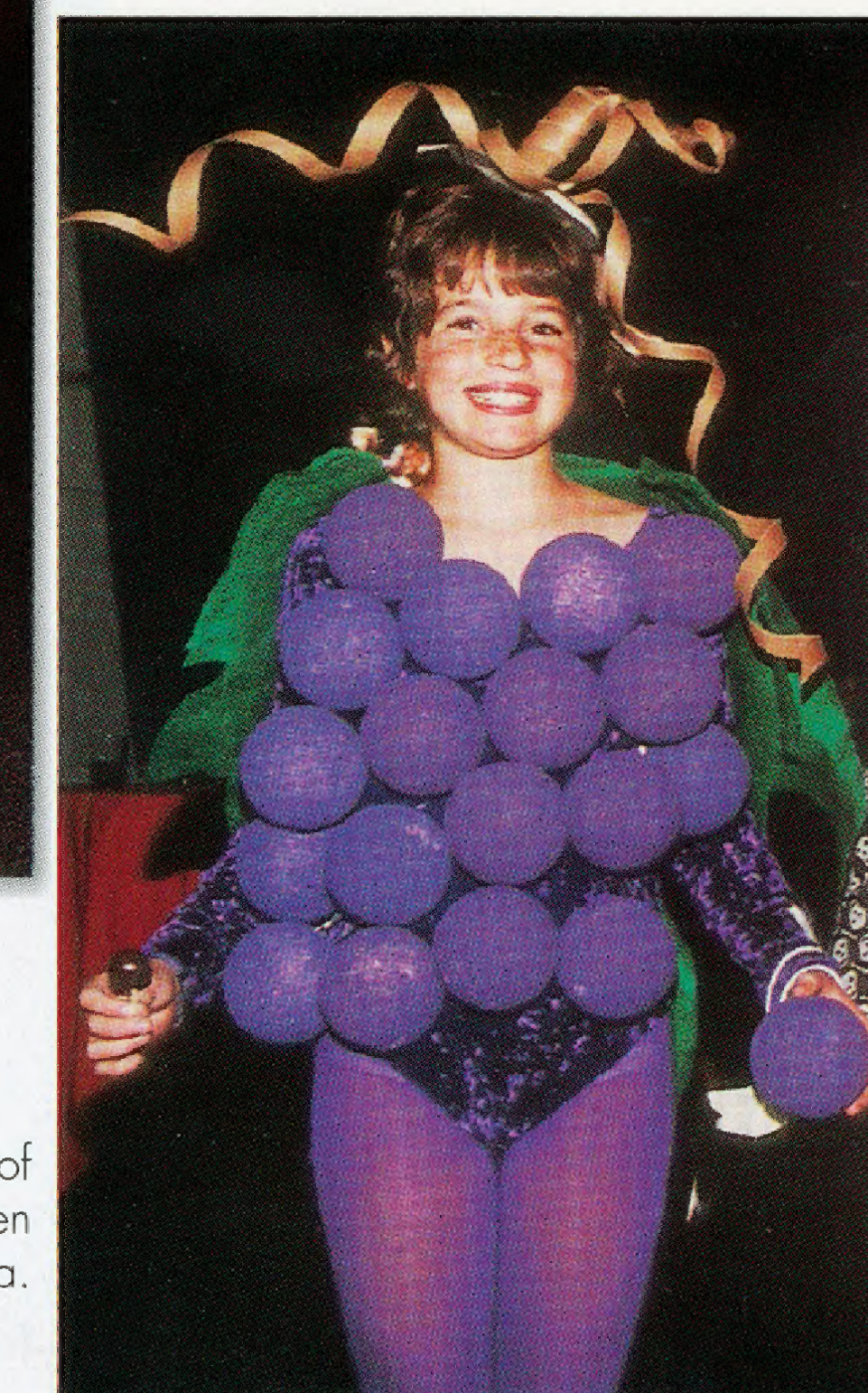
Butterfly masks made terrific gifts for the Gala.

Insects, Bugs & Rock 'n Roll

Over 1,500 party vertebrates danced the night away at the California Academy of Sciences' 6th Annual Summer Gala, *Insects, Bugs & Rock 'n Roll!* Six bands, McCall's delicious hors d'oeuvres, and continuous 3-D laser shows kept party revelers movin' and shakin' in support of Academy research and education programs.

Our thanks to Gala Co-chairs Richard Clements and Barbara Edwards, and the Gala Committee for making this summertime fundraiser a party to remember.

One gentleman gets into the party theme with his spider tux.



A few of last year's Halloween flora and fauna.



Gala goes dance to the beat of Pride & Joy.



Published by
California Academy of Sciences

Executive Director
Evelyn E. Handler Ph.D.

Editor in Chief
Carolyn Macmillan

Executive Editor
Meagan Levitan

Managing Editor
Samantha Moss

Design & Production
Martha Murray Design

Editorial Office: All Editorial inquiries should be directed to:
Dept. of Public Relations & Government Affairs
California Academy of Sciences
Golden Gate Park
San Francisco, CA 94118-4495
415.750.7295
Fax 415.750-7530

ACADEMY STORE

SPIDERS!



There's no better place to find creepy Halloween toys and gifts than the The Spider's Web Store. The spotlight is on SPIDERS! T-shirts with Academy logo (\$16.50 child, \$18.50 adult). We also have spider models, books, glow in the dark stick-ons, jewelry, specimens and even spiderwebs! With over 35,000 species identified, you're sure to find your favorite spider in The Spider's Web Store. Come in to look, wear, collect.



October

4 Saturday

Flamenco Dance
1 pm
(Traditional Arts)

8 Wednesday

Women In Evolution
2 & 7:30 pm
(Members Meeting)

9 Thursday

Turkish Carpet Weaving
10 am to 5 pm
(African Hall)

11 Saturday

Turkish Carpet Weaving
10 am to 5 pm
(African Hall)

12 Sunday

Turkish Carpet Weaving
10 am to 5 pm
(African Hall)

18 Saturday

Music From the Andes
1 pm
(Traditional Arts)

Exhibit Opens
Return to the Amazon:
the Watercolors of
Margaret Mee

21 Tuesday

Stellar Lifetimes
7:30 pm
(Planetarium Lecture)

Conserving California's Flora
7 pm to 9 pm

22 Wednesday

Plants and Gardens for
the Future
7 pm
(Opening Tour and Lecture)

24 Friday

Annual Halloween Party
6:30 pm

25 Saturday

The Celtic Way
10 am to 4 pm
(Goethe Room)

November

1 Saturday

Latin American Puppetry
1 pm
(Traditional Arts)

Follow a Creek to the Ocean
Field Trip, 9:30 am to 2:30 pm

Hosts & Their Guests
9 am to Noon
Junior Academy

3 Monday

Grandmothers, Menopause
& Evolution
7 pm
(Auditorium)

5 Wednesday

Spider Hunting Around
the World
6:30 pm
(Members Meeting)

6 Thursday

Wildlife in War: Conservation
Challenges in the Congo
7:30 pm

7 Friday

Spiders in the Wind
Downtown Series

8 Saturday

Life on the Edge:
Teaching About the Seashore
Class, 2 pm to 5 pm

Spiders!
9 am to Noon
Junior Academy

11 Tuesday

Origins of the Bay
2 & 7:30 pm
(Members Meeting)

The Ultimate Sunset
7:30 pm
(Planetarium Lecture)

14 Friday

Who Were the Neanderthals?
Downtown Series

15 Saturday

Trinidadian Steel Drum Music
1 pm
(Traditional Arts)

Life on the Edge: Teaching
About the Seashore
Field Trip, 2 pm to 6 pm

Spiders!
See Nov. 8

21 Friday

Preparation for the
Next Earthquake
Downtown Series

22 Saturday

Jewish Folk Chorus
1 pm
(Traditional Arts)

How to Use a Map and
Compass
10 am to 2:30 pm

Tracks & Tracking
9 am to 5 pm
Junior Academy Field Trip

27 Thursday

California Academy of Sciences
Closed for Thanksgiving Day

28 Friday

Weekend Sky Show Schedule
in effect
Sky Shows hourly from
11 am to 4 pm

30 Sunday

Run to the Far Side
8:30 am

VISITOR INFORMATION

Special Exhibitions:

SPIDERS! Through November 16
"Rugs of Teec Nos Pos:
Jewels of the Navajo Loom,"
through October 26

Feeding Times:
Fish Roundabout, 2 pm
Penguins, 11:30 am & 4 pm

Guided Tours:
Free one-hour highlight tours
daily

Laserium Shows:
Thu.-Sun. evenings

Free Day:
First Wed. of each month

Open every day of the year.
Winter hours - 10:00 am - 5 pm
Summer hours (Memorial Day
weekend to Labor Day)
9 am - 6 pm

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Education: 750-7100
Group Admissions: 750-7159
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